Shropshire Botanical Society

Newsletter

Spring 2017

Shropshire Botanical Society Newsletter No. 34

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Past copies of the newsletter are available as pdfs from the Shropshire Botanical Society website: http://www.shropshireecology.co.uk/botanical_society.html

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Front Cover photos

Ancient woodland indicators (photos by S Whild)

Top left: *Campanula trachelium*
Top right: *Anemone nemorosa*
Bottom: *Ranunculus auricornis*

Sarah Whild will be leading an interactive identification session on woodland plants at the AGM in April.

Our thanks to the Shropshire Wildlife Trust and the Field Studies Council for their generous support of our society. Both organisations support the work of the society in recognition of the importance of the contribution we make to understanding Shropshire botany.

Society News

Mags Cousins

We have an eclectic mix of articles for you this time, from the edible to the poisonous; a detailed look at the Veronica genus in Shropshire; an account of recording down the River Severn from a canoe and the last in the Sphagnum series. You will be delighted to know that we will be publishing all Martin's helpful tips for identification of Sphagnum in the form of a handy little booklet. If you have any subjects you would like included on the botany of Shropshire, or better still would like to submit your own article, please get in touch with the newsletter editor on Shropbotsoc@gmail.com.

As always, if anyone would like to put themselves forward to help on the committee we would love to hear from you. It is not onerous really, especially when the jobs are spread amongst the team but it would give the old stalwarts a break or at least a change!

There are a range of tempting field visits organised to which everyone is welcome, no prior experience is necessary, just book in with the leader, bring suitable footwear, clothing, food and drink. Don't forget to keep us updated on your current email address for reminders about field meetings and events and tell us if you would rather receive your newsletter as a pdf emailed to you.

As a taster for the season ahead, why not join us for the spring meeting:

Spring Meeting and AGM, 2-4pm,
Saturday April 8th 2017,
at the Field Studies Centre, Preston Montford,
Montford Bridge, near Shrewsbury, SY4 1HW:

"What's in your wood?" Sarah Whild leads an interactive identification session on woodland plants.

2017 Field Meetings

Dan Wrench

Saturday 6th May. Underhill Farm, Pant. Explore meadows and pools adjacent to Llanymynech Rocks Nature Reserve. Meet at 11:00 am at the Llanymynech Rocks Nature Reserve car park at SJ270219. Please book with John Handley on 0797 709 5124 or johnhandley11@gmail.com

Sunday 14th May. Flounder's Folly, between Lower Dinchope and Westhope. Very few plant records are available for this area but there is plenty of interest in the woodland and heathy areas. The view is also amazing. Meet at 11:00 am at SO456853 on the roadside. For further details contact Dan Wrench on 01743 537132 or danwrench@gmail.com

Saturday 17th June. Maddock's Hill Quarry. Meet at 11:00 am at Forest Glen Car Park between the Wrekin and the Ercall (SJ638092) to explore this under-recorded area. Contact the leader Penny Wysome for further details on pennywysome@yahoo.com, or Tel. 01952 242617

Saturday 1st July. Old Oswestry Hill Fort. This is not a regular Botanical Society meeting but members are encouraged along to help this Bioblitz to make a good list of plants. Species to look out for include Greater Broomrape and Stag's-horn Clubmoss. Meet at 12:00 pm. For further details please contact Clare Knight or Neil Phillips: cknight@turnstoneecology.co.uk and np@eclectic-music.co.uk

Saturday 8th July. Cole Mere Countryside Heritage Site. Beginners botany with a wonderful meadow, woodland and aquatic and marginal plants to look for. Star attractions include Meadow Thistle and the famous Least Water-lily. Meet at the car park (SJ436328) at 11:00 am. Please contact Sue Townsend for further information at: sue.t@field-studies-council.org

Saturday 12th August. Cramer Gutter.
Marsh Gentian is the star of this site and we will be counting the number flowering this year. The site is exceptionally rich in rarities but interesting re-finds of species not seen in a while would include Dioecious Sedge, Sheep's-bit Scabious, Bitter Vetch and Marsh Lousewort. We are likely to move on

to bogs on Catherton Common in the afternoon. Meet at 11:00 am near the Methodist Church at SO642797. For further details contact fionag@shropshirewildlifetrust.org.uk mobile: 07506 120019

Saturday 19th August. BSBI training event on Rose identification. The morning will be spent at Kate Thorne's Garden looking at several rose species. The afternoon will be spent in the Stiperstones area looking at Roses growing wild. Meet at Churton House, Church Pulverbatch, Shropshire, SJ42940287 [SY5 8BZ] at 10.00 am The house is next to the church. This is a full day's meeting so bring lunch. Places are limited so please book, preferably by email, to k.thorne@btinternet.com, or by post with SAE to Dr. A.K. Thorne, Churton House, Church Pulverbatch, Shropshire SY5 8BZ Phone: 01743 718270

Saturday 26th August. Burwarton and Brown Clee, meet at 11:00 am at Boyne Arms, Burwarton, SO617850. Leaders are Mags Cousins and Hilary Wallace. Contact Mags Cousins 07791 505641, mags@bagbatch.co.uk, beforehand as we hope to be able to explore a private estate before going up onto Brown Clee itself.

Manchester Metropolitan University Courses 2017 (The Gateway, Shrewsbury)

Wed 12th April - Tackling Plant Identification – M. Duffell

Wed 26th April - Microscopy for Botanists – M. Godfrey

Wed 17th May - Introduction to Grasses – M. Duffell

Wed 14th June - Identifying Sedges and their Allies – S. Whild

Wed 19th July - Identifying Yellow Composites – T. Rich

Mon 18th Sep. - Using the Vegetative Key to the British Flora – M. Duffell

Wed 8th Nov. - An Introduction to *Sphagnum* – M. Godfrey

Information and booking:

www2.mmu.ac.uk/sste/courses/short-courses/biological-recording

Tel. 01743 355137

New records in 2016

Alex Lockton & Sarah Whild

The level of botanical recording in the county remains fairly high, especially with several members of the Botanical Society recording sites for the Wildlife Trust, who send us the data for computerisation. So far we have compiled some 8,000 records of 907 species for 2016, and there are many more still to be done.

On the SEDN web site (www.shropshireecology.co.uk) you can find the species accounts from our recent Flora updated to include new species, changes to taxonomy and significant changes to existing species accounts. The accounts are updated every month or two. Curiously, no-one ever seems to have done this before, but it seems a practical way of providing people with an up-to-date account of the flora of the county. The pdf is of course searchable, and the species names are deliberately not abbreviated to make it easier to find a particular plant.

The entire Shropshire Flora database is also available online via the SEDN web site. We have our own Flora web site where you can search for a site or species and download all the records at the touch of a button, or you can visit the NBN web site and access the data from there. There is even a spreadsheet available from SEDN that you can simply download to get a useful summary of all the records (1km square, year, site, species & recorder).

1. Species added since the Flora was published

Aponogeton distachyos
Brachiaria platyphylla
Carex buchananii
Centaurea debauxii
Cololejeunea minutissima
Conyza floribunda
Cotoneaster franchettii
Crataegus × subsphaerica
Crocus × stellaris
Juncus ensifolius
Linum grandiflorum
Lonicera pileata
Malva arborea
Orthotrichum obtusifolium
Silene chalcedonica

Trifolium pannonicum
Triticum durum
Ulmus laevis

2. Changes to existing accounts

Alopecurus aequalis updated
Arenaria serpyllifolia split into *A. leptoclados* and *A. serpyllifolia*
Galeopsis speciosa updated
Galeopsis tetrahit updated
Nothofagus updated to *Lophozonia*
Petasites hybridus updated
Polygonatum multiflorum deleted; *P.* × *hybridum* account updated
Sagina apetala split into *S. apetala* and *S. filicaulis*
Salix cinerea subspecies raised to species level. *Salix atrocinerea* is reinstated as the commoner species; note this also necessitates changes in the names of some hybrids (notably × *reichardtii* is now × *quercifolia*) and the names of two NVC communities are changed. W1 is now "W1 *Salix atrocinerea*" and W2 is more helpfully "W2 *Phragmites australis.*"
Some maps of charophytes added
Sphagnum magellanicum updated

3. Records of new species

Brachiaria platyphylla, Broad-leaved Signal-grass: Harlescott, SJ5015, 20 Sept. 2016, Handley, Mr J.
Centaurea debauxii, Chalk Knapweed: Llanymynech Rocks, SJ2621, 04 Sept. 2016, Shanklin, Dr J., Rand, Mr M.W., Earl, Mr D.P.
Conyza floribunda, Bilbao Fleabane: Prees, SJ5533, 11 Oct. 2016, Shanklin, Dr J.
Cotoneaster franchetii, Franchet's Cotoneaster: Sambrook, SJ7124, 29 March 2016, Shanklin, Dr J.
Crataegus × *subsphaerica*, a hawthorn: Fauls, SJ5833, 05 Oct. 2016, Shanklin, Dr J.
Crocus × *stellaris*, Yellow Crocus: Tong Church, SJ7907, 15 Feb. 2016, Shanklin, Dr J.
Linum grandiflorum 'Rubrum', Crimson Flax: Castlefields, Shrewsbury, SJ4913, 28 Sept. 2016, Whild, Dr S.J.
Lonicera pileata, Box-leaved Honeysuckle: Marchamley, SJ5929, 05 Oct. 2016, Shanklin, Dr J.
Orthotrichum obtusifolium, Blunt-leaved Bristle-moss: Hawkstone Park, SJ5729, 06 March 2016, Wrench, Mr D.H.
Pterocarya fraxinifolia, Caucasian Wingnut: Eardiston, SJ3725, 25 May 2016, Shanklin, Dr J.
Silene chalcedonica, Maltese-cross: Uffington, SJ5314, 05 July 2016, O'Donnell, Dr S., O'Donnell, Mrs E.
Taraxacum pietii-oosterfeldii H. Ollg, Cole Mere, SJ4233, 5 May 1978, T. Edmondson (det. A.J. Richards, 2017, new to Britain).
Ulmus laevis, European White-elm: River Severn at Sheintonbrook, SJ6004, 06 June 2016, Wrench, Mr D.H.

4. The following people have so far contributed records in 2016 for v.c. 40

Aspey, Mr N.	28	O'Donnell, Dr S.	1
Bickerstaffe, Ms C.	73	O'Donnell, Mrs E.	1
Bingham, Mr J.	3	Peacock, Ms S.	193
Burrows, Ms A.	61	Pearson, Ms T.	95
Clayfield, Mr J.	1399	Perry, Mr A.	4
Cousins, Mrs M.	210	Prendergast, Mr A.	1
Crittenden, Ms M.	193	Rand, Mr M.W.	164
Crowther, Ms L.	60	Robinson, Mr A.	1266
Dawes, Mrs R.A.	80	Rook, Mr G.	1
Duffell, Mr M.S.	270	Rowe, Mr R.	620
Earl, Mr D.P.	164	Sams, Ms P.	1
Fox, Dr L.A.	204	Shanklin, Dr J.	2296
Gardener, Ms S.	337	Singleton, Mrs K.	252
Gomersall, Mrs F.J.	1037	Spence, Mrs S.	27
Handley, Mr J.	556	Stockton, Ms D.	1
Irving, Ms R.	102	Stokes, Mr R.M.	2
Lewis, Mr S.	2	Swindells, Mrs S.	9
Lockton, Mr A.J.	242	Thorne, Dr A.K.	303
Markland, Ms M.	21	Thorne, Mr R.G.	62
McLay, Mr A.	1	Townsend, Ms S.	3
Mileto, Mr R.	2	Walker, Mr C.	139
Mitchell, M.	114	Walton, Ms E.	1
Morris, Mr D.	1	Whild, Dr S.J.	90
Moss, Mr G.	1	Wrench, Mr D.H.	1237
Nash, Mr N.	2	Wysome, Mrs P.J.	488

Veronica – Speedwells in Shropshire

John Handley

Veronica L. was formerly nested within the Scrophulariaceae however phylogenetic research by the Angiosperm Phylogeny Group (2009) has led to them being segregated from this group and currently *Veronica* is the largest genus in the flowering plant family Plantaginaceae, with approximately 500 species worldwide.

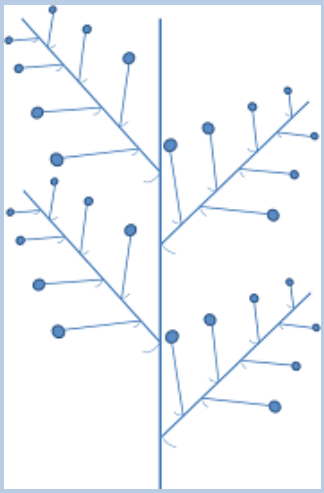
They can at first attempt appear difficult to distinguish, however there are only 15 herbaceous Veronica's recorded in Shropshire, and once we are familiar with what is being conveyed in the various keys most of these species are readily apparent.

The stems are more-or-less round in section, with opposite leaves, with pinnate or sometimes palmate venation. The flowers are blue, rarely pink or whitish: **in axillary or terminal racemes or solitary in the axils of the leaves**. The calyx has 4 lobes, the upper being absent (occasionally all 5 are present but the upper fifth is much smaller). The corolla ranges from showy to inconspicuous, with 4 subequal lobes, with the upper lobe the largest (representing 5 lobes of the 5-lobed genera), the lower the smallest. Stamens 2. The capsule is more-or-less laterally compressed, opening by 2 valves that produces few seeds.

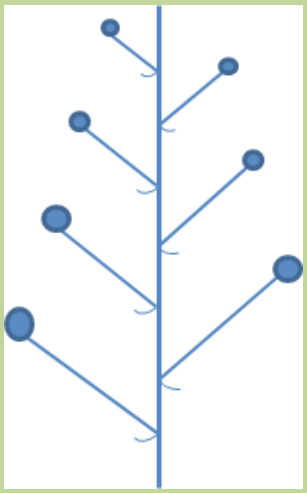
Most keys used to identify to species use the highlighted character to separate the different members of this genus so it is as well to develop a firm understanding otherwise we'll disappear into the wrong section of the key:

Flowers in axillary racemes, or terminal racemes, or solitary in the axils of the leaves.

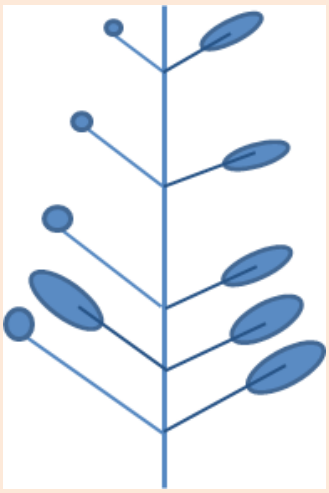
A raceme is a flower cluster with the separate flowers attached by short equal stalks at equal distances along a central stem. These are usually conical in outline and the growing points usually add to the inflorescence and in which there is usually no terminal flower. The oldest flowers are on the outside at the bottom of the cone, with the youngest, less developed flowers in the centre at the top of the flower spike. These three forms of growth can be illustrated thus:



Axillary racemes



Terminal racemes



Solitary in leaf axil

Key to the common species of *Veronica* found in Shropshire

1	Flowers in Axillary racemes Flowers in terminal racemes or solitary	2 8
2	Plant not hairy, except occasionally glandular hairy in inflorescence, growing in wet places Plant and leaves pubescent, growing in drier places	3 6
3	Racemes alternate **scutellata** Racemes opposite	 4
4	All leaves with a short petiole, obtuse **beccabunga** Upper leaves sessile, acute	 5
5	Corolla pale blue, capsule ± orbicular **anagallis-aquatica** Corolla usually pink, capsule wider than long **catenata**	
6	Stems pubescent along two opposite lines only, capsule shorter than calyx **chamaedrys** Stems pubescent all round, capsule longer than calyx	 7
7	Petioles >6mm; capsules >6mm wide **montana** Petioles <6mm; capsules <6mm wide **officinalis**	
8	Flowers in terminal racemes, upper bracts different from foliage leaves Flowers solitary in leaf axils, bracts closely resembling the foliage leaves	9 11
9	Annuals with 1 root system, easily uprooted **arvensis** Perennials, with non-flowering shoots and/or stems rooted more than just at base	 10
10	Corolla-tube usually >2mm, longer than wide **longifolia** Corolla-tube usually <2mm, wider than long **serpyllifolia**	
11	Perennial; stems rooting at nodes along length; pedicel >2x as long as leaves plus petioles **filiformis** Annual; stems only rooting at nodes at base; pedicel <2x as long as leaves plus petioles	 12
12	Calyx lobes cordate at base; leaves with 3-7 shallow lobes or teeth **hederifolia** Calyx lobes cuneate to rounded at base; leaves crenate to serrate, most with >7 teeth	 13
13	Lobes of capsule apices diverging at c. 90° from base; corolla mostly ≥8mm across **persica** De Johann Georg Sturm (Painter: Jacob Sturm) - Fig. from book Deutschlands Flora in Abbildungen at http://www.biolib.de, Dominio público, http://www.wikiwand.com/fr/Veronica_persica Lobes of capsule with apices ± parallel or diverging at narrow angle from base; corolla mostly ≤8mm across	 14
14	Capsule with patent glandular hairs only, stigma included within apices **agrestis** **Johann Georg Sturm (Painter: Jacob Sturm) - Fig. from book Deutschlands Flora in Abbildungen at http://www.biolib.de, Public Domain, https://commons.wikimedia.org/w/index.php?curid=780044** Capsule with many short eglandular arched hairs and variable numbers of patent glandular hairs, stigma excerted outside apices **polita** De Johann Georg Sturm (Painter: Jacob Sturm) - Fig. from book Deutschlands Flora in Abbildungen at http://www.biolib.de, Dominio público, https://commons.wikimedia.org/w/index.php?curid=780078 Key adapted from Stace (2010).	

	***Veronica scutellata* L.** **Marsh Speedwell** Scutellata translates as saucer shaped. Leaves 2–4 cm, linear-lanceolate or linear, acute. Yellowish-green often tinged with purple. Corolla 6–7 mm across, white or pale blue with purple lines. Native in ponds, bogs, wet meadows, etc. often on acid soils.	
	***Veronica beccabunga* L.** **Brooklime** The origin of the name beccabunga is disputed though it may be from the Flemish, beck punge, meaning mouth smart. It has recently been linked to the Italian Prime Minister Silvio Berlusconi. A glabrous perennial with thick, fleshy oval or oblong leaves. Corolla 7–8 mm across, blue. Native in streams, ponds, marshes and wet places in meadows.	 Photo by Stefan Lefnaer
	Veronica anagallis-aquatica **Water Speedwell** The word anagallis is in reference to the use of this plant as a herb. Aquatica, derived from its habitat. The leaves are large, fleshy and unbranched, ovate-lanceolate, acute remotely serrulate. Corolla 5–6 mm across, pale blue. Native in ponds, streams, wet meadows and wet mud.	 https://commons.wikimedia.org/wiki/File:Veronica_anagallis-aquatica.jpg
	Veronica catenata **Pink Water-speedwell** Catenata translates as chained or chain-like. Stems usually purplish tinged. Calyx lobes elliptic or oblong, widely spreading after flowering. Corolla pink with darker lines. Native in ponds, streams, wet meadows and wet mud.	 (Photo by Christian Fischer)

	Veronica chamaedrys **Germander Speedwell** Chamaedrys means lowly, creeping, on the ground. The long white hairs in two rows on opposite sides of the stem make this very distinct. Leaves triangular-ovate, sessile. Corolla c. 1 cm across. Deep bright blue with white eye. Native, in grassland, hedges and woods.	
	Veronica montana **Wood Speedwell** Montana pertains to mountains though *V. montana* is a Ancient Woodland Indicator. Stems hairy all round. Leaves ovate to orbicular-ovate, pale green. Corolla c. 7 mm across, lilac-blue. Native, in damp woods.	
	Veronica officinalis **Heath Speedwell** Officinalis was a term often used in medicine; it is derived from opificina, shortened to officina, originally a workshop or shop, later a monastic storeroom, pharmacy or drug-shop. Stems creeping and rooting, hairy all round. Leaves oblong to obovate-elliptic, hairy on both sides. Corolla c. 6 mm across, lilac. Native in grassland, heaths and open woods.	 https://commons.wikimedia.org/wiki/File:Veronica_officinalis.jpeg
	Veronica arvensis **Wall Speedwell** Arvensis pertains to the fields or cultivated land. Annual, Leaves ovate, entire to crenate-serrate. Corolla 2–3 mm across, blue. Native, walls, banks, open acid or calcareous ground and cultivated land.	

	Veronica longifolia **Garden Speedwell** Stems erect to 1.2 m, glabrous to minutely hairy. Leaves lanceolate, acute to acuminate. Introduced-naturalised; much grown in gardens and naturalised on waste and rough ground, banks and roadsides.	 https://no.wikipedia.org/wiki/Storveronika
	Veronica serpyllifolia **Thyme-leaved Speedwell** Serpyllifolia means wavy or flexuous. Perennial, rooting at nodes. Leaves shortly petiolate, glabrous. Corolla 5–8 mm across, whitish to pale blue. Native, waste and cultivated ground, paths, lawns, open grassland, woodland rides and on mountains.	
	Veronica filiformis **Slender Speedwell** Filiformis means threadlike and probably refers to the long thin pedicels. Leaves orbicular to reniform, crenate. Corolla 8–15 mm across, blue. Introduced-well naturalised, on streamsides, lawns, grassy paths, banks and roadsides.	
	Veronica hederifolia **Ivy-leaved Speedwell** Hederifolia refers to the ivy-like leaves. Stems procumbent to scrambling or ascending. Leaves orbicular to reniform, with 1–3 large teeth or lobes each side. Corolla 6 mm across, whitish to blue. Archaeophyte, cultivated and waste ground, open woods, hedgerows, walls and banks.	

	Veronica persica **Common Field-speedwell** Persica means from Persia. Annual, with procumbent to decumbent stems. Hairy, leaves ovate, serrate. Corolla 8–12 m across, bright blue. Introduced, well naturalised in cultivated and waste ground.	
	Veronica agrestis **Green Field-speedwell** Agrestis pertains to field or cultivated land. Annual, with procumbent to ascending stems. Hairy, leaves ovate, serrate. Corolla 3–8 mm across, whitish to pale blue or pale lilac; capsules with patent glandular hairs only. Archaeophyte, cultivated ground.	
	Veronica polita **Grey Field-speedwell** Polita translates as polished, well-mannered. It differs from *V. agrestis* in the lower leaves being wider than long (not longer than wide), dull to greyish-green (not light to mid-green); Calyx lobes acute to sub-acute (not obtuse to sub-acute). Corolla bright blue; and capsule with short eglandular hairs ± to strongly arched hairs and variable numbers of patent glandular hairs.	

References

Angiosperm Phylogeny Group (2009)."An update of the Angiosperm Phylogeny Group classification for the orders and families of flowering plants: APG III". Botanical Journal of the Linnean Society. 161 (2): 105–121.doi:10.1111/j.1095-8339.2009.00996.x. Retrieved 17th September 2016.

STACE, C. A. (2010). *New Flora of the British Isles*, ed. 3. Cambridge University Press, Cambridge.

August Botanical Society Visit - Two helpings of Limestone?

Penny Wysome

SBS visits have a number of possible objectives, sometimes there is a quest for a rarity, or an exploration of a new habitat but there is definitely a role for the unashamed appreciation of an area with a rich and attractive flora. Two accessible sites around Much Wenlock provided just this on August 20th, not an ideal date for limestone grassland flowers but this did not deter the members who turned up. Several people had called to let me know of their intention to come, and in some cases to express some doubt about their ability to identify the plants and to ask if it was OK to come with limited botanical knowledge. I said it was more than OK, we are all learning all the time and are happy to share what we know. Our first destination was Windmill Hill, a lovely grassland on the approach to Much Wenlock from Ironbridge.

Fourteen botanists or would be botanists arrived in pouring rain and we huddled under umbrellas introducing ourselves while sheltering in the wood bordering Windmill Hill. We managed to resist the temptation to adjourn to the Copper Kettle and with true British grit moved on to the grassland – in a brisk wind, but drier. In the absence of any senior committee botanists an informal sub-committee of the more experienced plant hunters among us helped with identification and this seemed to encourage the more hesitant souls to offer suggestions without feeling too much like apprentices. There was some genuine challenge for the cognoscenti in that many species were being identified from vegetation and seedheads rather than flowers. A prolonged search for evidence of *Filipendula vulgaris* Dropwort, which had been spotted in full flower some weeks earlier was successful but neither *Ophrys apifera*, Bee Orchid or *Atropa belladonna*, Deadly Nightshade were found. However, there was a substantial collection of limestone species found, with the grasses *Briza media* Quaking Grass, and *Trisetum flavescens* Yellow Oat-Grass much in evidence. *Pimpinella saxifraga*, Burnet-saxifrage, *Thymus polytricha* Wild thyme, *Blackstonia perfoliata*, Yellow-wort, *Centaurium erythraea* Common Centaury, *Fragaria vesca* Wild Strawberry and *Knautia arvensis* Field Scabious were all present in good numbers providing further evidence of the calcareous nature of the soil. *Gentianella amarella ssp amarella* specimens were spotted to great delight, perhaps the late date did have some advantages. This was a new plant for several of the members present. By this time confidence was growing and species names were being fired at recorders and sub-committee for approval. Windmill Hill is surrounded by more neutral grassland and some woodland so a wide variety of species was eventually listed, these included *Agrimonia eupatoria* Agrimony *Lotus corniculata*, Birds Foot Trefoil, Trifolium species, clovers and both *Primula veris and vulgaris*, Cowslips and primroses.

Filipendula vulgaris Dropwort (photo by Penny Wysome)

115 species were recorded, many of these were plants commonly found but not always identified. Embryonic botanists may start with the star species but not tackle the speedwells, geraniums, dandelion lookalikes and horror of horrors the grasses, until later in their development. With the help of our trusty sub-committee we bravely faced down the challenge of the Asteraceae to sort our Hawk's-beards from our Hawkbits and nailed the commoner grasses.

Having worked hard in trying conditions for a couple of hours the group was offered an opt out – back to the Copper Kettle or even one of the conveniently close hostelries rather than tackle the second site but the many stalwarts in the party opted to carry on. We reconvened at Blakeway Hollow, a National Trust site just off the Church Stretton road out of Much Wenlock where we lunched in much improved weather – sunshine in fact, definitely a reward for our commitment. Courtesy of the National Trust we made our way up the path along Wenlock Edge and climbed into some grasslands among old quarries .

The site is flower rich, and to the delight of our party the species list was almost identical to the Windmill Hill one. This was the perfect consolidation of the morning's activity and a lovely example of a limestone grassland community. Wandering through these beautiful species, now identified, in sunshine was a real treat. Our final task was to go back to the lane and try and find *Nepeta cataria,* Cat-mint, last recorded sometime ago. This quest was fruitless but we did find *Allium oleraceum*, Field Garlic which was locally abundant so felt suitably satisfied with this nice find.

This was not a day for the extreme botanists – hanging from their fingertips on crags looking for rare fern fronds or agonising over hybrids and sub-species. We did not walk very far, we hung from no outcrops, we were never more than 5 minutes from a tea shop, but we saw and identified over 100 plants and appreciated the biodiversity of these two lovely sites.

Plants that affect the skin

Ruth Dawes

Some plants have compounds that irritate the skin and tissue, such as members of *Euphorbiaceae* and *Ranunculaceae*. Other plants are phototoxic, including various members of *Apiaceae* and *Hypericaceae*. A number of compounds can cause allergic reactions, such as dermatitis, found in members of *Asteraceae* for example. *Urticaceae* is a family with stinging hairs filled with noxious chemicals. Last, but not least, some have spikes or thorns that cause wounds, such as *Rosaceae*.

Contact with the plant or sap of *Heracleum mantegazzianum*, Giant Hogweed, is well known for causing skin irritation. Accidental skin contact with the furanocoumarins the plant contains can cause itching and redness, followed by nasty blistering in exposure to sunlight. The blisters, similar to bad burns, heal very slowly and can leave dark patches on the skin long term. Affected areas of skin can remain hypersensitive for years. Botanists, gardeners and those on working parties need to beware of *Heracleum spondylium*, the common Hogweed, too. This can have a similar effect when you are working on a sunny day. Best to keep the skin covered.

Urtica dioica, Nettle, hairs carry histamine and

Heracleum mantegazzianum Giant Hogweed
(photo by Peta Sams)

other compounds. The hairs are stiff due to silica encrustation. Skin contact with nettles causes painful itching with welt formation in the places pricked by the stinging hairs. Sensitive skin will react to this inflammation for several days. It is not surprising that the terms *Urtica* and urticaria have a connection. *Prunus spinosa* thorns have a reputation for being dirty, possibly due to bird droppings and other debris, punctures by such thorns can cause painful local irritation and infection.

Senecio jacobea, Ragwort, has pyrrolizidine alkaloids in all its parts. These can cause damage to liver, lungs, kidneys and pancreas. After prolonged intake they can mutate and become carcinogenic and cause irreversible cirrhosis of the liver. The liver then releases chemicals which cause the skin to be more sensitive to sunlight. Livestock are the most likely to be affected. Cattle and horses do not normally eat the growing plant, but when it is dried in hay it becomes more palatable. Affected cattle then need to be kept indoors and are unlikely to be "good doers" as the farmers say. An old name used by north Shropshire farmers was Mare's Fart, which relates to the odour of the foliage, shows their contempt for this plant. Not all creatures are poisoned by Ragwort. Cinnabar Moth, *Tyria jacobaeae*, caterpillars feed voraciously mainly on this plant. The poison is stored in their bodies, (and remains in the adult moth), resulting in a foul taste, which repels predators, including birds. Ragwort is also an important source of nectar for some insects.

Euphorbia species have phorbol esters compounds in the irritating toxic latex. This can cause severe local reactions with redness and blister formation. *Hypericum* species are also a hazard to grazing animals and can cause phytotoxicity.

Flora Britannica has an interesting anecdote about *Mercurialis perennis*, Dog's Mercury, a member of *Euphorbiaceae*, from what was probably the first account of the plant's toxic effects in the spring of 1693, which occurred in Shropshire.

> "A woman gathered wild herbs for her family's supper. Having boiled them, she then fried them with bacon. Her three children became very ill and the parents were up with them taking them to warmth and coping with their vomiting and purging before the children fell into a deep sleep, the parents also. The man woke very late the next morning and attended his labouring job at a delayed hour. By the strength of his constitution he carried it off, but he reported that his chin was on fire all day. He was forced to keep his hat full of water by him and frequently dipped his chin in it as he was at work. One of the children died after four days of unconsciousness."

There are other reports of the toxic effects of Dog's Mercury, including inflammation of the cheeks and jaws, gastric upsets and kidney inflammation, including one in the *British Medical Journal* in 1983, where the consumers had confused the plant with *Veronica beccabunga*! Why, one wonders?

These families and species are just a few of many that can cause problems. Some plant families, such as *Primulaceae*, affect some people and not others. Some plants are more toxic in some parts than others, such as the stones of *Prunus* species, which contain cyanide. Other plants are more toxic in certain growth stages or seasons. Light skinned livestock are seen to be more susceptible to problems with sensitivity to UV light than their dark skinned counterparts.

So, are the plants that cause skin problems more dangerous than the plants that contain mind altering substances? Cue for another article next time.

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The Genus *Sphagnum* – a guide part 8: Section *Subsecunda*

Martin Godfrey

Introduction

This section is the one with rather untidily spreading/hanging stem leaves and frequently rather swollen, curved branches. When growing in good light the plants often have some yellow or coppery colour. In practice the section can be quite a tricky one to recognise and, with the odd exception, is the one in which I most often resort to the microscope for identification. Have a look at article 6 in this series for microscopy technique details, which you may need later.

There are five species from this section growing in Britain and all of them have been recorded for Shropshire. *S. denticulatum* and *S. inundatum* are quite widespread and common, *S. contortum* is rather scarce as is *S. subsecundum* (although this may be underrecorded as it is similar to *S. inundatum*) and *S. platyphyllum* is rare with just a few records.

It is probably most convenient to divide the section in two – *S. denticulatum* and *S. platyphyllum* which are relatively straightforward to identify and the other three, *S. inundatum, S. contortum* and *S. subsecundum* which can look very similar in the field.

S. denticulatum and *S. platyphyllum*

When growing well *S. denticulatum* is a large conspicuous plant with swollen, curved branches, fig 1. However it has quite a wide ecological amplitude and with this can be morphologically rather plastic – in shaded conditions it can look

Fig 1. *S. denticulatum*

Fig 2. Submerged *S. denticulatum*

rather like *S. inundatum* whilst when growing submerged, fig 2, its bulky form can be rather suggestive of *S. palustre*.

A useful field feature to distinguish between *S. denticulatum* and *S. inundatum* is the structure of the fascicle – in *S. denticulatum* the spreading and pendent branches are not very different and there are 2-3 spreading and 1-2 pendent. In *S. inundatum* the spreading and pendent branches are clearly different from each other and there are 2-3 divergent and 2-4 pendent branches in the fascicle. If you get a really problematic plant then you will need to resort to the microscope. Here you will find that the stem leaves are almost completely fibrillose in *S. denticulatum* whilst in *S. inundatum* they are only 20% - 40% fibrillose.

S. platyphyllum, fig 3, is usually easy to identify in the field – although small it has rather short thick branches with only 1-3 branches per fascicle and

Fig 3. *S. platyphyllum*

rather large elliptical stem leaves. In all the other species in sect. *Subsecunda* the stem leaves are more or less triangular.

S. inundatum, S. contortum and *S. subsecundum*

All three of these species are rather small, slender, plants – indeed *S. subsecundum* can be a bit like

Fig. 4. *S. inundatum*

S. capillifolium (albeit never red) – with branch fascicles of 2-3 spreading and 2-4 pendent branches. In the field they all look rather alike, fig. 4, note the rather curved branches as a good indicator for this section of the genus.

When well grown both *S. inundatum* and *S. subsecundum* have dark (even blackish) stems but the former is much the larger and has longer stem leaves, typically over 1 mm and up to around 1.5mm, whereas *S. subsecundum* is a slender plant with stem leaves mostly under 1 mm, ranging from around 0.5mm – 1mm. Apart from being slender and pale I find *S. contortum* a challenge in the field and I will usually take it home to check under the microscope. When not terribly well grown the first two species will often come home too for microscopic checking when the ID of all three can be quite straightforward. A stem section will show that *S. contortum* has a cortex 2–3 cell layers thick, whilst the other two have a cortex one cell layer thick, fig. 5. To separate *S. inundatum* from *S. subsecundum* you will need to examine the fibrils in the stem leaf cells, fig. 6 – the former is fibrillose for 20%–40% of its length while the latter is fibrillose for 0–25% of its length.

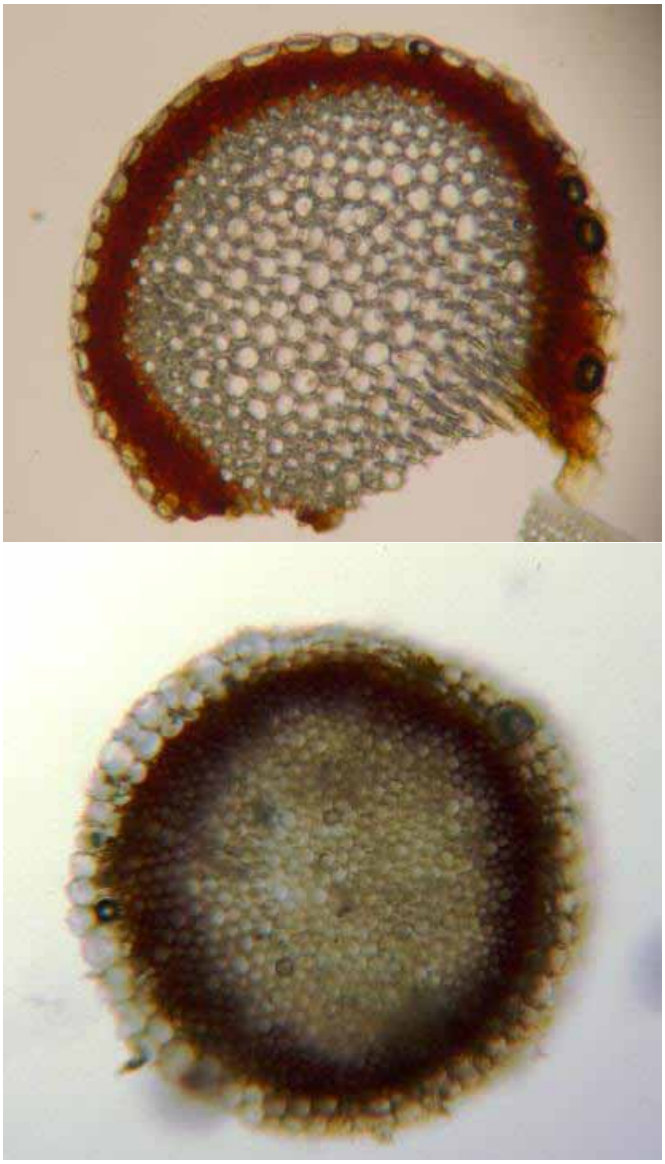


Fig 5. Stem cortex thickness.

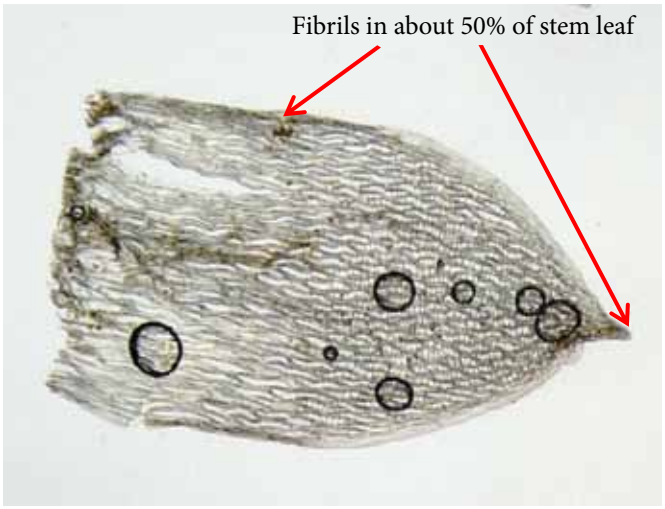


Fig 6. Extent of fibrils in stem leaf.

Browse Britain Blog

John Handley

I speculated with friends over the course of the festive season on writing a 'wild food' blog. This was partly inspired by my enjoyment of Pete Boardman's InvertChallenge365 blog and partly to channel my own interests and it will take the form of a weekly blog from my website checology.com.

I will explore lots of questions. Historically, what would it have been like obtaining food from our local environment? What sort of food does one eat in the middle of winter? What are the nutrient values of the different types of food? How are the raw food items processed and what chemical changes ensue? Through the blog I will explore processes like brewing and culturing micro-organisms such as bacteria and yeast, as well as trying to understand how our own morphology has been shaped by cooking.

I'm certain that after a year I'll have a very different perspective on my environment. I'm not planning on living off the Earth, and this isn't about survival, this is simply asking questions about food and our environment.

This will be entirely plant based though I'm hoping to explore different habitats – maybe even coastal habitats if the opportunity arises. I'm looking forward to discovering new places, flavours and textures.

I have set myself an ambitious challenge: eating a new plant each week, therefore I'd appreciate any help that is available. What plants are you familiar with that have been eaten? Suggestions, and permission from landowners for places to forage are particularly welcome. Ideas, or your own questions, would be interesting too. All ideas, recipes and suggestions will be gratefully accepted. Keep an eye out for the blog and please pass this on to people who you think might be interested.

Gorse

The buttery, yellow flowers that crowd the spiny branches of Gorse plants are wonderful to see, as much because they can be flowering abundantly even in the middle of winter; there is a saying that "when gorse is in blossom, kissing's in season". This is as much about the three different species of gorse in Britain and the different times they flower

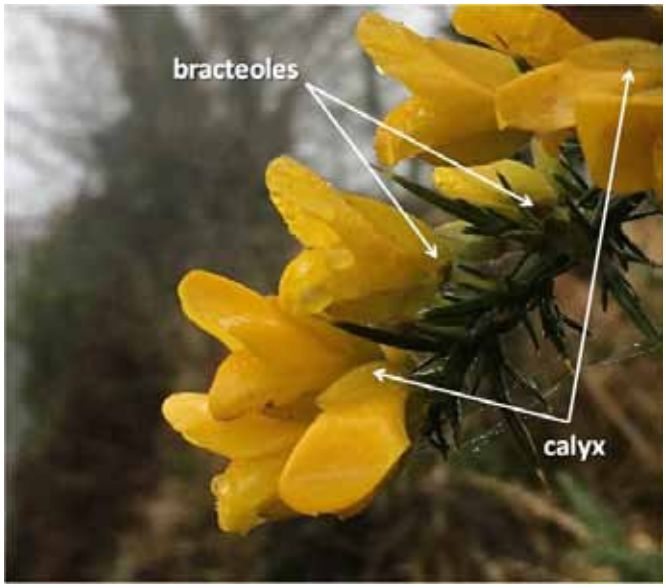
This picture of Gorse, *Ulex europeaus*, was taken on Dartmoor on the 7th January 2017. Some flowers are over and the pods are forming but amidst the ones in mid-flower are young buds that are yet to open.

through the year.

The name 'Gorse' probably comes from the Anglo-Saxon word *gorst,* meaning 'a waste', referring to the plant growing in rough places. Another common name for it is 'furze', this is thought to have come from the Anglo-Saxon *fyrs* – Gorse has long been gathered for fire wood. Oliver Rackham states that it is one of the very few fire promoting plants of British woodlands (Rackham, 2006).

Gorse is one of the 151 species that make up the *Fabaceae*, pea family, within Britain. This family were formerly known as the *Leguminosae*, from which we get the phrase legumes. Many of the plants in this family have root nodules that contain symbiotic bacteria called Rhizobia. These bacteria can fix nitrogen from the atmosphere, where it is unavailable to plants, and convert it into a form the plant can use.

This adaptation means that gorse is a common

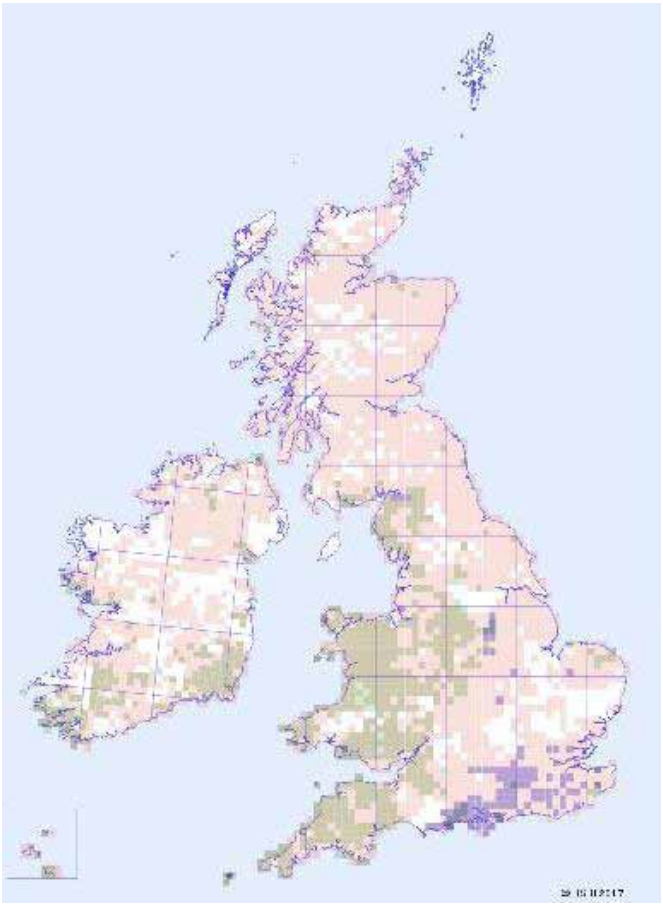


Bracteole - a secondary bract seated on the pedicel – to unpack that: a bract is a modified leaf or scale, typically these are small. Each flower has two bracteoles, either side of the calyx where it connects with the pedicel.
Pedicel - this is the stalk that supports the flower.
Calyx – this is the collective term for the sepals, these typically protect the flower when it is in bud.

plant of nutrient poor soils such as heathland and commons. As a pioneer plant it quickly colonises brownfield sites and it is quick to establish on land that is reverting back from farmland.

My pleasure at seeing it bloom when so many other plants are in their basic form sets it apart, but for so many people, commoners, it was a daily blessing. It grows rapidly and requires no maintenance and provides a source of fuel that burns fiercely, an ideal source of kindling and perfect for the baker's oven.

Its uses are varied, as much because the poverty which necessitated its collection provided the inspiration for its uses therefore it has been used as a barrier to inhibit livestock. In the darkest of situations as a chimney brush and as a colourant for Easter eggs. Scattered over the surface of



The map shows the distribution of all three species:
Pink: *Ulex europeaus*
Green: *Ulex gallii*
Blue: *Ulex minor*
Gorse is distributed throughout Britain and Ireland. Western gorse, as the name implies has a western distribution, and only just creeping over the border into Scotland. Dwarf gorse has the smallest of all ranges with Britain, distributed mainly in the south-east with isolated populations occurring in the East Midlands.

Map provided by the Botanical Society of Britain and Ireland: http://bsbi.org/maps

seedbeds to discourage deer and pigeons and bound up with heather to create a besom broom.

Gorse mills were used to bruise the gorse stems and help take the edge off the grooved spines; gorse

There are three types of Gorse in Britain:

Common name	Taxonomic name	Characteristics	Period of flowering
Gorse	*Ulex europaeus*	Bracteoles the same size or more than twice as wide as the pedicels	January to June
Western Gorse	*Ulex gallii*	Bracteoles smaller than *U. europeaus*. Calyx 9 - 13.5mm	July to November
Dwarf Gorse	*Ulex minor*	Bracteoles smaller than U. europeaus. Calyx 6.5 - 9.5mm	July to November

Adapted from Stace (2010)

was an important foodstuff for livestock, especially for horses; with an acre of gorse providing sufficient winter fodder for six horses. The gorse mill, contained heavy metal spikes fixed to an axle, it was driven directly off the waterwheel and would crush and bruise the gorse making it palatable.

Its value meant that there were strict rules as to when it could be cut and how much each commoner could take. Richard Mabey (1998) refers to parishioners only being allowed to take

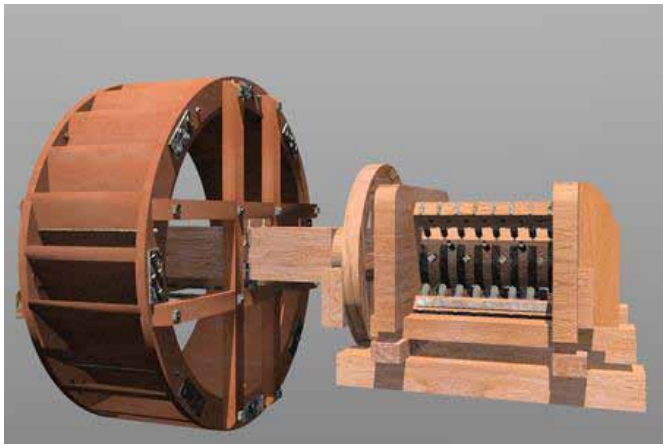


Image of a gorse mill kindly provided by John Brandrick, http://www.a0tech.co.uk/html/gorse_mill.html

as much as they could "carry on their backs", on Cumnor Hurst, Oxfordshire following the Enclosure Award in 1820. In other areas of the country rules prevented plants from being uprooted and only certain types of implements could be used, to restrict the amount that could be harvested.

The ability of gorse to flower over such an extended period and throughout an adverse period of the year makes it a useful plant for bees, who will use the pollen as they come out of hibernation. Bees are the primary pollinators of gorse: flowers that emerge in the winter produce as much pollen and are of comparable size to those produced in the spring. The winter flowers stay open for longer and the particular appeal of winter flowers means that the pollination as is high in the winter as the spring however only 43% of flowers become ripe pods in winter whereas 75% of flowers pollinated in the spring will result in ripe pods (Bowman *et al.*).

I enjoy watching bees collect the brown pollen early in the spring, though my main enjoyment of gorse is to use the flowers to make a tea. You can use the flowers fresh or dried, a useful tip is to pick the flowers and put them to one side until they have wilted a little, any residents will leave and you won't have to fish them out of your cup! It is said to smell and taste of coconuts though that defeats many of the people I mention it to. A dozen flowers per person if using fresh flowers, half a dozen if using dried flowers, bruise them to bring out the flavour and infuse in boiling water. I serve it with a little lime flower honey, a lovely buttery taste that I find soothing for throats too.

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River Severn trip

Dan Wrench

From the 1st to the 11th June 2016 a team of 14 led by Shropshire Wildlife Trust embarked on a 210 mile journey to celebrate Britain's greatest river, The River Severn! Fortunately I was asked along. My part of the journey was between the 3rd and the 9th. This was from the start of the canoeing section at Pool Quay, just north of Welshpool, down to Tewksbury in Gloucestershire. I missed one day of the trip between Ironbridge and Alveley (the 7th June). The gap in records was so annoying when mapped that I returned to canoe that stretch on the 16th July.

Back in 1995 Stephen Ayliffe and I made a few records by kayak of *Carex acuta* Slender Tufted-sedge. This new trip presented an opportunity to make a more complete record of the distribution of this species in Shropshire - and beyond.

The intention was to record *Carex acuta* and, by request of David Tompkins, *Gomphus vulgatissimus* Common Club-tail. Ten minutes or so into the start of the canoeing I noticed some *Salix pentandra* Bay Willow and had to record this. This was shortly followed by a little *Butomus umbellatus* Flowering-rush. So the original check list of one species gradually expanded into several species. Many species were too common, and therefore too time consuming, to record regularly. These included many fully aquatic species and species like *Sparganium erectum* Branched Bur-reed. On reflection species like *Myriophyllum spicatum* Spiked Water-milfoil and *Potamogeton pectinatus* Fennel Pondweed could have been more consistently recorded but this would perhaps have further strained the patience of my fellow canoeists who often had to wait for my canoe to catch up.

Across Montgomeryshire, Shropshire, Worcestershire and Gloucestershire a total of 483 records were made from the boat - 424 records being of vascular plants the rest being fauna such as the Common Club-tail, the occasional Mink *Neovison vison*, Oystercatcher *Haematopus ostralegus* and even a Wood Duck *Aix galericulata*.

A further 32 species were recorded where we camped one night at the newly created hay meadows next to Ismore Coppice, near Atcham.

Some odd species in the relatively dry grassland here included *Sanguisorba officinalis* Great Burnet, *Silene flos-cuculi* Ragged-Robin, and *Succisa pratensis* Devil's-bit Scabious. How long these species persist there remains to be seen.

One of the more interesting finds in Shropshire was found on day 6 near Leighton. An Elm was pointed out to me which, on inspection was not one of the common species. The sample I took keyed out very simply as *Ulmus laevis* European White-elm a non-native species growing in an apparently native looking situation on the river bank. This appears to be a new record for the county.

A lunch stop provided the opportunity to record a further 57 plants at Cockshut Rough across the river from Leighton. A good find there was *Paris quadrifolia* Herb Paris. A short while later while setting up tents in Ironbridge the rare and, as the name suggests, very tiny *Cololejeunea minutissima* Minute Pouncewort was found growing on a tree near the Boat Club.

The 10 most commonly recorded species that were recorded are listed below with the total number of records plus the number of new monad records (Shropshire only). The full list of records can be viewed on iRecord (www.brc.ac.uk/irecord) or here: http://bit.ly/LYMag7List. There are plans afoot for another trip down the Shropshire part of the Severn in 2017 which may be an opportunity for another focus - perhaps on the aquatic species.

Species	Vernacular name	Records	New monads
Carex acuta	Slender Tufted-sedge	125	21
Butomus umbellatus	Flowering-rush	78	31
Persicaria amphibia	Amphibious Bistort	33	12
Gomphus vulgatissimus	Common Club-tail	32	unknown
Fallopia japonica	Japanese Knotweed	31	13
Sparganium emersum	Unbranched Bur-reed	23	23
Sparganium erectum	Branched Bur-reed	21	0
Potamogeton perfoliatus	Perfoliate Pondweed	17	9
Acorus calamus	Sweet-flag	11	3
Equisetum fluviatile	Water Horsetail	10	4